DRAGONS OVER

Combat Aircraft Journal meets Colombia's A-37 'Dragons', which have proven their worth on many occasions over an incredible 40-year history.

REPORT AND PHOTOS **Erwan de Cherisey**

BARRANQUILLA, COLOMBIA, SITS on the Caribbean coast, a short hop from ideal training areas. As the twin General Electric J85 engines of a Cessna A-37B Dragonfly whistle into life, Lt Col S (full name withheld for security reasons) goes through pre-taxi checks before the little attack aircraft scuttles out to the main runway. The Dragonfly sits low to the ground, with its straight wings laden with an impressive complement of fuel tanks and ordnance. With his wingman aboard, Lt Col S signals the start of the take-off run, soon getting airborne and heading out to sea.

These aircraft belong to the Fuerza Aérea Colombiana (FAC, Colombian Air Force) and its Escuadrón de Combate 311 (ESCOM 311) 'Dragones' based at Barranquilla, in the north of the country. The squadron is the FAC's sole A-37 unit, a type that has now been in service for more than 40 years. Nicknamed 'Dragon' by the Colombians, the A-37B continues to play a critical role in the fight against guerrillas and criminal groups that still operate in Colombia. The FAC also operates around 13 T-37 Tweets that are used for training with Escuadrón de Combate 116 'Tango' at Palanquero.

A-37 origins

In 1977, Colombia was keen to expand its attack and interdiction capabilities, which had been weakened by the withdrawal of its last Douglas B-26 Invader at the end of the 1960s. The Colombian capital, Bogotá, thus requested thus requested the provision of six Cessna A-37Bs from America. At the time, the US Air Force (USAF) had insufficient numbers of Dragonflies available to transfer. Washington therefore proposed to deliver two A-37Bs and four T-37Bs and the FAC accepted the deal, thinking that — like the T-37C which it already fielded — the T-37B would be capable of carrying weapons for use in the light attack role until additional A-37s could be obtained. However, the T-37B lacked the necessary wiring for carrying weapons, limiting it to the training role.

The first two A-37Bs (serials FAC-2151 and 2152) were received in December 1978. In 1980, Bogotá learned that more A-37s had become available — requesting the delivery of another four examples in exchange for the return of the T-37Bs, subsequently adding another six for a total of 10 aircraft. The new examples received serials FAC-2153-2162 and they were delivered between the second half of 1980 and the first semester of 1981.

Despite their age, Colombia's A-37Bs are maintained in pristine standard, as illustrated by this example, seen flying over the Caribbean.

THE CARIBBEAN

Satisfied with the A-37's capabilities, the FAC sought to further expand its fleet and to that end, in 1983, it placed an order for another 12 former US aircraft, which were likely obtained from the Air National Guard (ANG). The aircraft received Colombian serials FAC-2163-2174 and were delivered in December 1984. Five years later, a batch of eight additional A-37s was received from the US (FAC-2175-2182). In 2011, six airframes were purchased from Chile. Four of these (FAC-2183-2186) were subsequently refurbished and pressed into service with the FAC to compensate for the withdrawal of a number of aircraft that had reached the end of their service lives. Finally, in 2016, a further two A-37s were acquired, this time from the Dominican Republic and, following extensive servicing, were commissioned into service in 2017 as serials FAC-2187 and 2188.

Into service

It appears that the first two Colombian A-37s were initially based in Cali, alongside the FAC's T-37Cs. With additional deliveries taking place, the aircraft were then relocated to Barranquilla in the early 1980s, under the recently established Grupo Aéreo Norte (Northern Air Group), which later became Air Combat Command 3 (CACOM 3: Comando Aéreo de Combate 3). The reason for their positioning there was to intercept the growing number of illegal flights crossing Colombia's Caribbean waters. Due to the twin-engine configuration, the A-37s were found to be safer to operate over the sea than single-engine fighters. Although based at Barranquilla, multiple aircraft were positioned at different air bases on temporary deployments for air interdiction and attack duties.

In 1981, in response to the increasingly aggressive attitude of the nationalist rebellion group Sandinista Nicaragua, which claimed the Archipelago of San Andres, Providencia, and Santa Catalina as part of its territory, Colombia decided to reinforce its military presence in the area. As a result, the Grupo Aéreo del Caribe (Caribbean Air Group) was established in San Andrés, with a detachment of A-37s to act as a deterrent against Nicaragua. This presence was maintained until the late 2000s, when Embraer A-29 Super Tucanos took over the assignment.

In four decades of service, Colombia's A-37s have taken part in most combat operations conducted by the military against the different guerrilla, terrorist, and criminal groups in the country. They have proved their worth on multiple occasions.

The Dragons' nest

Headquartered in Barranquilla, CACOM 3 controls Grupo de Combate 31 (Combat Group 31), which comprises four flying units: ESCOM 311 which flies the A-37s; ESCOM 312 'Drako' with Embraer A-29B Super Tucanos; Escuadrón de Combate Táctico 313 (Tactical Combat Squadron 313), which operates a mix of Bell 212 Rapaz, Cessna 208, and Embraer C-95 Bandeirante; and Escuadrón de Defensa Aérea 314 (Air Defense Squadron 314), which fields several Cessna SR-560s. ESCOM 315 — an aerial navigation unit with specialists

such as ground controllers — is also part of the group.

The exact number of A-37s currently in service with ESCOM 311 is not officially disclosed. However, it's known to include a single former US aircraft (FAC-2161), four former Chilean aircraft, and a pair of ex-Dominican jets. In 2018, ESCOM 311's nimble jets clocked 650 flying hours.

ESCOM 311's pilots come from a diverse set of backgrounds, but all of them trained at the Escuela Militar de Aviación (Military Aviation School) in Cali, passing through basic training before progressing to the T-37B, and then to the A-37. Once at ESCOM 311, new pilots undertake an average of 72 hours of training that includes a yearly trip to Peru for emergency procedures training in a bespoke A-37 simulator.

MAINTAINING THE 'DRAGONS'

Maintenance of the A-37s is conducted by Technical Group 31, which comes under the direct authority of CACOM 3. The main servicing phases are conducted every 150, 300, and 900 flying hours.

'Dragons' in detail

The A-37 features four 'wet' underwing hardpoints for external fuel tanks for increased endurance. In Colombia, these are almost always carried. The FAC A-37s are also fitted with an in-flight refueling probe, which allows them to tank from the FAC's single Boeing 767-2J6ER 'Jupiter' in-flight refueling aircraft. This capability has proven critical in combat operations where the A-37s have found themselves orbiting for hours in the air, waiting for positive target identification from ground intelligence sources to be able to prosecute an attack.

The weapons used by ESCOM 311 include the A-37's nose-mounted General Electric GAU-2B/A 7.62mm gun with 1,500 rounds of ammunition as well as a range of wing-mounted stores. These comprise LAU-68 launchers each carrying seven 70mm rockets, 250lb Mk81, 500lb Mk82, and 750lb M117 dumb bombs. The Raytheon GBU-49 GPS/INS-guided bomb can also be carried, as well as SUU-25 flare launchers. These carry eight illumination rounds that can either be standard flares or infra-red versions, used in conjunction with night-vision goggles.

While originally intended to perform air interdiction, light attack, and close air support (CAS) duties, the FAC's A-37s have been modernized over time to adapt to the changing specifics of the Colombian internal conflict. Indeed, Colombian 'Dragons' are noteworthy for being the only examples in the world with the ability to employ GPS-guided ordnance in the shape of the Raytheon GBU-49. This capability was added to the fleet to meet an increasing need for higher precision when conducting air strikes against the Fuerzas Armadas Revolucionarias de Colombia (FARC, Revolutionary Armed Forces of Colombia — People's Army), notably to reduce the risk of collateral damage.

The initial plan called for integrating the GBU-49 onto the A-29, but, due to the complexity of the process, the program was shelved and the FAC decided instead to outfit the A-37 with the ordnance. Integration work began in 2006 by fitting the A-37s with the Raytheon Enhanced Paveway Avionics Kit (EPAK), which allows aircraft not equipped with a MIL-STD-1760/1553 interface to accept GPS/INS-guided bombs. The first operational bombings using the GBU-49 took place in 2007 and, since then, the vast majority of air strikes conducted by the A-37s have seen the use of this weapon.

Today, a small number of ESCOM 311's A-37s are still equipped with EPAK, while the remaining examples are fitted with the Wireless Paveway Avionics Kit (WiPAK). The

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The FAC A-37Bs typically operate with four underwing drop tanks to maximize range and mission endurance.

latter is a non-intrusive solution developed by Raytheon, which allows integration of the Paveway without the need for any modification to the wiring or flight and stores management systems. The WiPAK comprises a receiving station, which is installed in the A-37 cockpit, an antenna that is mounted on its fuselage, and a control tablet the pilot straps to one of his thighs.

A number of other improvements were made to the A-37s before GBU-49 integration, which included the modification of the aircraft's cockpit to make it compatible with night-vision goggles (NVG), in 1998. A more extensive upgrade, undertaken at the end of 1999, involved fitting 14 aircraft with a Garmin GNS 530 avionics suite, together with an Attitude and Heading Reference System (AHRS), and a Collins Aerospace RTU-4220 radio tuning unit. The work was performed entirely in Barranquilla with assistance from US company ARINC.

Top: A small life-extension project has increased the A-37's flight hours to 7,860.

Above left to right: The nose is fitted with an internal General Electric GAU-2B/A 7.62mm Minigun with 1,500 rounds of ammunition.

The predominantly analogue cockpit of the A-37B, which has received a few minor upgrades over the years.

Left: The A-37 is able to carry an impressive external load despite its small size.

In 2008, the FAC developed an innovative weapons delivery pattern for its A-37s when using unguided ordnance by conducting combined strikes with the A-29s.

In 2013, the FAC modified its A-37s with M130 chaff/flare launchers to improve their self-protection capabilities. Infra-red light emitting panels have also been added on each side of the fuselage in order to provide visual bearings for close formation flying when operating at night with NVGs. The airframes have also been put through a life-extension program that has increased service life from 7,000 to 7,860 flying hours.

Combat exploits and training exercises

Throughout their long careers in Colombia, A-37s have performed a wide range of combat duties, from air interception/interdiction to precision

strike, as well as light attack or CAS. The Dragons are noteworthy for their participation in almost every single major operation undertaken by the Colombian military against the guerrillas of the FARC until the 2014 ceasefire.

Among these was the bombing of the FARC's headquarters, known as Casa Verde, in December 1990, as part of Operation 'Colombia', which saw the involvement of nine A-37s. In February 2002, several A-37s took part in Operation 'TH' ('Todo Honor', all honor) which mobilized more than 20,000 troops for the purpose of retaking the so-called Distention Zone, a safe-haven of sorts, created in 1998, where FARC forces were concentrated as part of peace negotiations with the Colombian government. When talks failed to make headway, the government decided to dismantle the zone and launched a military operation to retake it. In September 2007, the A-37s conducted their first operational bombing mission with the GBU-49 under Operation 'Nascent Sun', which saw the 'Dragons' carry out a night strike on a FARC position. In October 2007, the A-37s struck again, during Operation 'Alcatraz'. On March 1, 2008, they were involved in Operation 'Phoenix', which culminated in the death of the commander of the FARC's Southern Block, who was hiding in Ecuador, just a stone's throw from Colombia. The night air attack involved three A-37s armed with GBU-49s and five A-29s carrying unguided ordnance. The aircraft released their bombs while in Colombian airspace, but the operation sparked a stand-off between Ecuador, Venezuela, and

Left: FAC Dragonfly pilots have a wealth of combat experience, and they are regularly called upon to tackle a variety of operational missions.

Above: FAC A-37Bs join a Brazilian C-130 for in-flight refueling during Exercise 'Cruzex' in 2013. **FAC**

Colombia, which saw the Venezuelan military concentrate forces on the border with Colombia until the issue was resolved by diplomatic means.

In addition to these and many other major actions, the A-37s have participated in multiple smaller missions and continue to play a critical role in the ongoing confrontation against criminal groups in the region. In June 2018, a pair of ESCOM 311 aircraft provided CAS with 70mm rockets and Minigun fire for troops fighting a large guerrilla force in the region of Catatumbo, in the northeast of Colombia. A single AC-47T gunship and a Sikorsky AH-60L attack helicopter were also involved, acting as forward air controllers for the A-37s. On February 2, 2019, three A-37s that had been forward deployed to Palanquero air base took off and released two GBU-49 bombs on a position occupied by FARC dissidents.

The 'Dragons' have also been used intensively in the air interception role, against illegal flights used for drug or contraband transport. Until 2005, Colombian legislation allowed for the shooting down of such flights. Indeed, in 1985, the first downing of an illicit aircraft by an A-37 took place. Several others followed until the change in the law. Since then, the FAC's A-37s have continued performing air policing and interception duties, forcing aircraft to land instead of bringing them down.

By the early 2000s, the FAC was seriously considering withdrawing its A-37s from service, but the nimble jets have since proven how indispensable they truly are. Cost effective and exceptionally rugged, they are like Swiss-army knives, their multipurpose nature having been massively improved by the addition of the GBU-49. While the replacement of the A-37s is being actively considered, the topic is clearly complex, since there are very few aircraft currently available on the market that can offer comparable capabilities at a similar cost. The 'Dragons' thus have several years ahead of them during which they will continue to extend their wings over Colombia's skies, rendering invaluable services to the FAC.

Above left to right: A LAU-68 launcher carrying seven 70mm rockets.

A-37B pilots wear night-vision goggles to enable operations around the clock.

Below: The Colombian A-37s feature a fixed in-flight refueling probe on the nose.